



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
|-----------------|-------------|----------------------|---------------------|------------------|
| 10/790,932 | 03/02/2004 | Norihiko Tanaka | FY.51036US1A | 3245 |

20995 7590 04/05/2006

KNOBBE MARTENS OLSON & BEAR LLP
2040 MAIN STREET
FOURTEENTH FLOOR
IRVINE, CA 92614

EXAMINER

COOLMAN, VAUGHN

| | |
|----------|--------------|
| ART UNIT | PAPER NUMBER |
|----------|--------------|

3618

DATE MAILED: 04/05/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

| | | | |
|------------------------------|-------------------------------|-------------------------------|--|
| Office Action Summary | Application No. 10/790,932 | Applicant(s) TANAKA ET AL. | |
| | Examiner Vaughn T. Coolman | Art Unit 3618 | |

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 23 January 2006.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-27 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-27 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 23 January 2006 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Claim Rejections - 35 USC § 103

Claims 1, 2, 3, 4, 5, 13, 14, 15, 16, 17, 20, 21, 22, 23 are rejected under 35 U.S.C.

103(a) as being unpatentable over Leipert (U.S. Patent No. 1,852,464) in view of Fukamachi et al (U.S. Patent No. 6,405,823).

[claims 1 and 2] Leipert discloses a vehicle capable of being used off-road that includes: a frame (FIGS 3, 4; items 12), a plurality of wheels (shown in FIG 4) supporting the frame, at least two seat assemblies (FIG 4, items 32, 34) disposed side by side on the frame. In FIG 5, Leipert shows the seat assemblies being spaced apart from each other to define a space therebetween. Leipert also shows the engine being disposed generally adjacent to the seat assemblies in FIGS 3-5. However, Leipert does not disclose his engine (FIG 5, item 13) for powering the wheels as being an internal combustion engine. Fukamachi teaches a water-cooled internal combustion engine (Column 3, lines 62-63) for a vehicle wherein the engine (FIG 2, item 4) includes an air intake port (FIG 2, item 12a), the air intake port being in direct communication with a combustion chamber (FIG 2, item 12) or cylinder head. Fukamachi also shows an air intake system (FIG 2, item 20), a carburetor, delivering air to the intake port. It would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the vehicle shown by Leipert, with the internal combustion engine as taught by Fukamachi, since such a modification would have the advantage of being able to swing the engine vertically in order to undertake major repairs while seated in the vehicle. It is obvious

Art Unit: 3618

that when the engine of Fukamachi is combined with Leipert's vehicle that at least a portion of the air intake system will be extending through the space between the vehicle seats.

Although not described in detail in the previous office action, it is obvious from FIG 2 of Fukamachi that the engine has at least one front surface that would face the space of Leipert.

The air intake port (12a) is shown opening at one of the front surfaces of the engine.

[**claims 3 and 4**] by inserting the engine of Fukamachi into the space of Leipert's vehicle and keeping the front to rear orientation as shown by Fukamachi in FIG 1, the engine obviously has a portion, the cylinder head and cover, positioned generally at a rear end of the space. The portion includes the intake port (12a). Fukamachi also shows the intake system extending generally forwardly from the intake port. It would have been obvious to one having ordinary skill in the art at the time the invention was made to further modify the vehicle shown by Leipert in view of Fukamachi, with the engine orientation and component layout further taught by Fukamachi, since such a modification would provide two advantages at the same time. The first advantage is the air intake system being disposed such that it would receive fresh, cool air from the grille area shown in FIG 2, without the air first being heated by passing over any other engine components. The disposition of the cylinder head to the rear of the space has the advantage of being closer to the radiator of Leipert (FIG 4, item 14) in order to cool the engine.

[**claim 5**] Fukamachi further shows the intake system including a carburetor (Column 4, line 36). It is extremely old and well known in the art that a carburetor includes a throttle body and the throttle body includes a throttle valve. It is obvious that the throttle body in the carburetor of Fukamachi is at least partially disposed within the space of Leipert. It would have been obvious to one having ordinary skill in the art at the time the invention was made to provide

Art Unit: 3618

a carburetor for an internal combustion engine in order to regulate the air and fuel mixture provided to the combustion chamber.

[claim 13] Leipert further shows the seat assemblies defining a top surface (shown in FIGS 3, 4) and at least a portion of the engine (FIG 3, item 13) being disposed lower than the top surface (shown in FIGS 3, 5).

[claims 14 and 15] Leipert further shows the seat assemblies defining a rear surface (shown in FIGS 3, 4) and at least a portion of the engine (FIG 3, item 13) being disposed forward of the rear surface (shown in FIGS 3, 4).

[claims 16 and 17] Leipert in view of Fukamachi discloses all of the elements of the claimed invention as described above and Fukamachi further shows the engine (FIG 2, item 1) including an exhaust port (FIG 2, item 12b) communicating with the combustion chamber (FIG 2, item 12). He also shows the engine comprising a rear surface and the exhaust port opening through the rear surface. Furthermore, Fukamachi teaches an exhaust system for the engine, the exhaust system (not shown) extending rearward from the exhaust port that opens through the rear surface (Column 4, lines 39-40). It would have been obvious to one having ordinary skill in the art at the time the invention was made to further modify the vehicle shown by Leipert as modified by Fukamachi, with the exhaust port and system as taught by Fukamachi, since such a modification would have the advantage of directing hot exhaust gases rearward of the passenger compartment in order to maintain climate control therein. It would also be obvious for the exhaust system to include the exhaust pipe taught by Fukamachi in order to aid in the compliance of the vehicle with emissions laws wherever the vehicle is purchased and used.

Art Unit: 3618

[claims 20-23] Leipert in view of Fukamachi discloses all of the elements of the claimed invention as described above including Fukamachi teaching a second surface on the engine that is positioned generally opposite to the first surface. In re claims 20 and 21, the first surface is described above as the front surface and the second surface is referred to as the rear surface. The elements of claims 22 and 23 were addresses in re claims 2-4 and 16-17, respectively.

[claims 24 and 26] Leipert further shows the seat assemblies being fixed to the frame. Examiner is interpreting the word “fixed” reasonably broad. Merriam-Webster’s Tenth Edition Online dictionary defines the word “fixed” as securely placed or fastened. The seat assemblies are indeed securely fastened to the frame.

[claims 25 and 27] Fukamachi further shows the engine comprises a cylinder block (11), the cylinder block positioned over a transmission housing (5). The combination would disclose the air intake system generally being positioned forward of the cylinder block (5) and over a portion of the transmission housing (shown in FIG 2 of Fukamachi).

Claims 6, 7, 8, 9, 10, 11, 12 are rejected under 35 U.S.C. 103(a) as being unpatentable over Leipert (U.S. Patent No. 1,852,464) in view of Fukamachi et al (U.S. Patent No. 6,405,823) and further in view of Rioux et al (U.S. Patent No. 6,648,093).

[claim 6] Leipert in view of Fukamachi discloses all of the elements of the claimed invention as described above except for: the intake system comprising an air intake duct disposed upstream relative to the throttle body, the intake duct generally extending forwardly from the throttle body, and a forward portion of the intake duct extending downwardly. However, Rioux teaches an air intake system for an off-road vehicle that includes all of these elements. Referring

Art Unit: 3618

to FIG 22, Rioux shows an air intake duct (item 398) disposed upstream relative to the throttle body of Fukamachi, also shown in Rioux (item 344). Rioux also shows the intake duct generally extending forwardly from the throttle body, as item 398 is disposed at the front of the vehicle. In the direction of air travel, Rioux also shows a forward portion of the intake duct (398) extending downwardly. It would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the vehicle shown by Leipert in view of Fukamachi, with the air intake ducting system as taught by Rioux, since such a modification would provide the advantage, according to Rioux, of eliminating the entry of mud or water splashed up from the wheels (Column 10, lines 47-48). This modification is particularly suited for the vehicle of Leipert, because he shows the air intake pathway to be open to the atmosphere, and therefore the adverse elements, from the bottom of the vehicle (FIG 4).

[claim 7] Leipert in view of Fukamachi and Rioux discloses all of the elements of the claimed invention as described above and Leipert further shows the seat assemblies (FIGS 3-5) defining a top surface and a forward surface, and the intake ducting layout of Rioux is obviously capable of extending generally along the top and forward surfaces shown by Leipert. It would have been obvious to one having ordinary skill in the art at the time the invention was made to further modify the vehicle shown by Leipert as modified by Fukamachi and Rioux, with the intake duct routing as taught by Rioux, since such a modification would position the ducting in a position at the top of the engine compartment, then route it underneath the front dash of Leipert (FIG 3, item 16) in order to avoid any electronics or climate control components located therein.

[claim 8] Leipert in view of Fukamachi and Rioux discloses all of the elements of the claimed invention as described above and Rioux further shows the intake duct including an

Art Unit: 3618

accumulator, shown in FIG 22 as the rear portion of item 400, disposed between the throttle body (FIG 22, item 344) and the balance of the intake duct (FIG 22, items 398, 399). The inner diameter of the accumulator of Rioux is shown as being greater than an inner diameter of the balance of the intake duct, as evidenced by the shoulder portion of item 400. Furthermore, the air box (item 401) shown in FIG 22 of Rioux can be considered as part of the accumulator as well, further increasing the inner diameter size relative to the balance of the intake duct. It would have been obvious to one having ordinary skill in the art at the time the invention was made to further modify the vehicle shown by Leipert as modified by Fukamachi and Rioux, with the accumulator as taught by Rioux, since such a modification would provide a constant supply of air, by accumulating it in the expanded areas noted above during acceleration and travel, regardless of the adverse affect that the deceleration of the vehicle imparts on the fresh air intake rate at the front of the vehicle.

[claims 9 and 10] Leipert in view of Fukamachi and Rioux discloses all of the elements of the claimed invention as described above and Leipert further shows a floorboard (FIG 4, items 33, 35, 39) extending at least forwardly from a base portion of the seat assemblies (shown in FIG 4). Leipert also shows the floorboard including an upward projection (shown in FIG S 3-5) that defines a tunnel. Rioux teaches both the intake duct further including a portion obviously capable of extending forwardly of the seat assemblies at a location generally below a portion (FIG 4, item 39) of the floorboard and the intake duct in that position extending within at least a portion of the tunnel. It would have been obvious to one having ordinary skill in the art at the time the invention was made to further modify the vehicle shown by Leipert as modified by Fukamachi and Rioux, with the intake duct routing as taught by Rioux, since such a modification

Art Unit: 3618

would provide the advantage of protecting the intake duct from damage caused by debris, the floorboard area described above being positioned to block debris from certain entry angles.

[claim 11] Leipert in view of Fukamachi and Rioux discloses all of the elements of the claimed invention as described above and Rioux further teaches the intake system including an air filter/cleaner (FIG 22, items 416, 417) that is connected (shown in FIG 22) to the intake duct. It would have been obvious to one having ordinary skill in the art at the time the invention was made to further modify the vehicle shown by Leipert as modified by Fukamachi and Rioux, with the air cleaner as taught by Rioux, since such a modification would provide the advantage of filtering harmful particulates out of the intake air provided to the combustion chamber.

[claim 12] Leipert in view of Fukamachi and Rioux discloses all of the elements of the claimed invention as described above and Leipert further shows his vehicle including a hood (FIGS 3-5, item 17) covering at least a forward portion of the frame (shown in FIG 4). Leipert does not show the air cleaner unit being disposed below the hood. However, Rioux teaches a position of the air cleaner unit that when combined with the engine of Fukamachi is obviously capable of being disposed below the hood. It would have been obvious to one having ordinary skill in the art at the time the invention was made to further modify the vehicle shown by Leipert as modified by Fukamachi and Rioux, with the air cleaner unit positioning as taught by Rioux, since such a modification would provide the advantage of increased accessibility in order to change the air cleaner unit's filter element, a process well known in the art.

Claims 18, 19 are rejected under 35 U.S.C. 103(a) as being unpatentable over Leipert (U.S. Patent No. 1,852,464) in view of Fukamachi et al (U.S. Patent No. 6,405,823) and further in view of Matsuura et al (U.S. Patent No. 6,920,949).

[claims 18 and 19] Leipert in view of Fukamachi discloses all of the elements of the claimed invention as described above except for a pair of front wheels and a pair of rear wheels supporting the frame or the wheels including a balloon tire. However, Matsuura teaches the use of balloon tires (Column 3, lines 58-62) for a both a pair of front wheels and a pair of rear wheels of an off-road vehicle (shown in FIGS 1, 2). It would have been obvious to one having ordinary skill in the art at the time the invention was made to further modify the vehicle shown by Leipert as modified by Fukamachi, with the tire type and configuration as taught by Matsuura, since such a modification would provide increased ride stability due to the wheel configuration, and increased shock absorption from the tires due to the low pressure, wide balloon tires.

Response to Arguments

Applicant's arguments filed 01/23/2006 have been fully considered but they are not persuasive.

In the applicant's arguments, the phrase "off-road vehicle" forms the crux of the applicant's arguments against the applied art of Leipert. However, there is no **claimed** structure that would differentiate the applicant's invention as an "off-road vehicle". The invention of Leipert is indeed capable of traveling off-road, as many commercial vehicles travel off-road to deliver or receive cargo.

Examiner disagrees with the applicant's statement found on page 10, lines 17-18 wherein the Fukamachi invention is described as "an all terrain vehicle". Fukamachi is silent as to the type of terrain a vehicle utilizing the engine configuration of his invention may or may not traverse.

In response to applicant's argument that there is no suggestion to combine the references, the examiner recognizes that obviousness can only be established by combining or modifying the teachings of the prior art to produce the claimed invention where there is some teaching, suggestion, or motivation to do so found either in the references themselves or in the knowledge generally available to one of ordinary skill in the art. See *In re Fine*, 837 F.2d 1071, 5 USPQ2d 1596 (Fed. Cir. 1988) and *In re Jones*, 958 F.2d 347, 21 USPQ2d 1941 (Fed. Cir. 1992). In this case, the knowledge generally available to one of ordinary skill in the art shows (see Botar - U.S. Patent No. 4,534,442) that it is possible to pivot an engine of a vehicle to work on it. Being seated in the vehicle while working is a distinct advantage that one of ordinary skill in the art would recognize. Furthermore, safety is improved during roadside breakdowns or inclement weather where protection from the elements (rain, wind other vehicles, etc.) is desirable.

In response to applicant's argument that the examiner's conclusion of obviousness is based upon improper hindsight reasoning, it must be recognized that any judgment on obviousness is in a sense necessarily a reconstruction based upon hindsight reasoning. But so long as it takes into account only knowledge which was within the level of ordinary skill at the time the claimed invention was made, and does not include knowledge gleaned only from the

Art Unit: 3618

applicant's disclosure, such a reconstruction is proper. See *In re McLaughlin*, 443 F.2d 1392, 170 USPQ 209 (CCPA 1971).

As noted by the applicant (page 11, lines 13-15), Fukamachi was directed to reducing vibrations in an engine. The intended result of the reduced vibrations is reduced noise (Column 1, lines 60-63). Fukamachi also contemplated utilizing the noise-reducing features of his invention in other types of vehicles, including "four-wheeled automotive vehicle[s]" (Column 9, lines 37-39). Inserting an engine exhibiting reduced noise characteristics into a vehicle having an engine located close to the driver and passenger is within the skill of an ordinary worker in the art.

In response to applicant's argument that Leipert is nonanalogous art, it has been held that a prior art reference must either be in the field of applicant's endeavor or, if not, then be reasonably pertinent to the particular problem with which the applicant was concerned, in order to be relied upon as a basis for rejection of the claimed invention. See *In re Oetiker*, 977 F.2d 1443, 24 USPQ2d 1443 (Fed. Cir. 1992). In this case, the field of applicant's endeavor is motor vehicles, which is identical to the applicant's. Examiner respectfully suggests that lessons learned in one genre of the motor vehicle art are instantly applicable to other genres. Reducing or suppressing noise from an engine is desirable for all motor vehicles. The fact that most motor vehicle companies refer to this category as "nvh" or noise, vibration, and harshness shows the importance placed on this category for all motor vehicles. While Leipert may not explicitly contemplate the problem of reducing noise, one of ordinary skill in the art at the time the invention was made would be able to look at the figures of Leipert and wonder how loud the

engine's "nvh" would be in the cab of the truck with the engine located between the driver and passenger and only separated from the passenger compartment by a hood.

Furthermore, applicant notes that Leipert is classified in 180/68.4 a subclass directed to radiators. Examiner respectfully suggests that one function of an air intake system of any vehicle including a radiator is to direct air to the radiator. The unintended result of protecting the air intake area is simply an added benefit of the Leipert invention.

In regards to the applicant's assertion (page 12, last paragraph) that claims 2 and 16 recite limitations not taught by the prior art, please refer to the above rejections for the teaching of said limitations.

Conclusion

THIS ACTION IS MADE FINAL. Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the mailing date of this final action.

Art Unit: 3618

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Vaughn T. Coolman whose telephone number is (571) 272-6014. The examiner can normally be reached on Monday thru Friday, 8am-6pm EST.

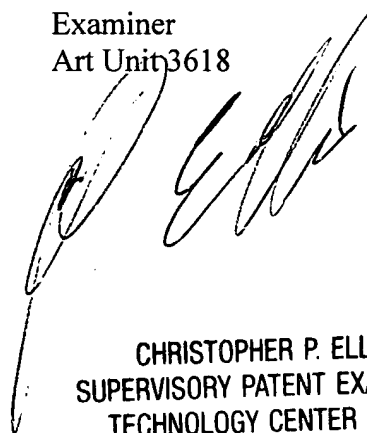
If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Christopher Ellis can be reached on (571) 272-6914. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

vtc


04/03/06

Travis Coolman
Examiner
Art Unit 3618


CHRISTOPHER P. ELLIS
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 3600